

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
22 November 2001 (22.11.2001)

PCT

(10) International Publication Number  
**WO 01/89178 A2**

(51) International Patent Classification<sup>7</sup>: **H04M**

(21) International Application Number: PCT/US01/15602

(22) International Filing Date: 15 May 2001 (15.05.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
09/571,660 15 May 2000 (15.05.2000) US

(71) Applicant: **FOCUSPOINT, INC.** [US/US]; 9500 Technology Drive, Manassas, VA 20110 (US).

(72) Inventor: **OWEN, Creston, M.**; 11440 Yeats Drive, Catlett, VA 20119 (US).

(74) Agent: **HAHN, Thomas, S.**; Vorys, Sater, Seymour and Pease LLP, 1828 L. Street, N.W., Eleventh Floor, Washington, DC 20036-5109 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CN, CO, CR, CU, CZ, DM, DZ, EE, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, RO, RU, SD, SG, SI, SK, SL, TJ, TM, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

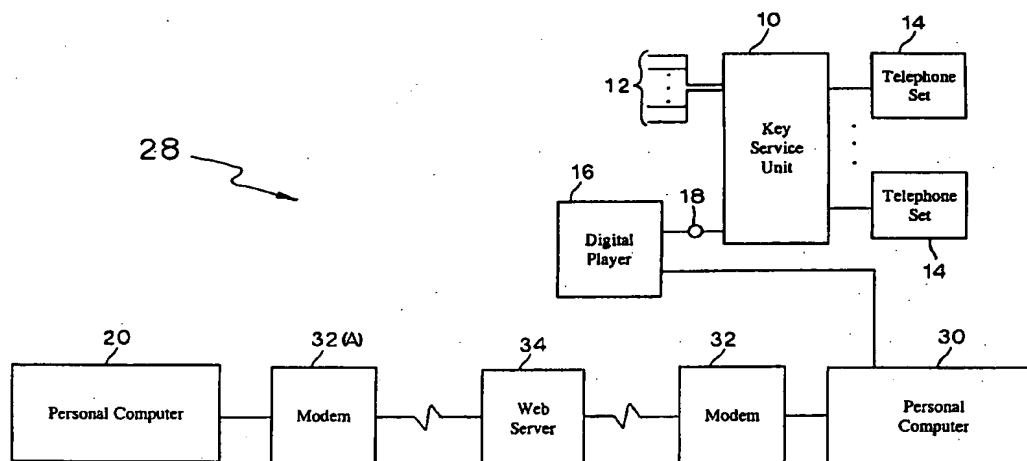
(84) Designated States (*regional*): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

**Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: APPARATUS AND METHOD FOR PROVIDING AND UPDATING RECORDED AUDIO MESSAGES FOR TELECOMMUNICATION SYSTEMS



(57) Abstract: A method and system for effecting production, approval and downloading of audio programs via the Internet. An order for an audio program is placed by a customer using a personal computer connected by the Internet to a server system. The server system receives the customer order and sends to the customer options for preparing a script and selecting music types that are to be dubbed into the audio program. A draft audio program is prepared by a service provider and downloaded to the server system. The customer accesses the server system and previews the draft audio program. If the customer wants the draft audio program changed, the customer inputs the changes to the server system. A redrafted audio program is prepared and loaded on the server system. This process is repeated until the customer approves an audio program for downloading to a memory device for later reproduction.

**APPARATUS AND METHOD FOR PROVIDING AND UPDATING  
RECORDED AUDIO MESSAGES FOR TELECOMMUNICATION SYSTEMS**

**BACKGROUND OF THE INVENTION**

5

1. Field of the Invention

The present invention relates in general to the field of providing recorded audio messages for telecommunications systems and, more particularly, to apparatuses and methods using the Internet to remotely order, create, edit, review, approve and download audio messages to be recorded for reproduction.

10

2. Discussion of the Prior Art

The first installed telephone systems had single lines provided to separate locations. Even in the case of business establishments, such single-line installations were the normal practice, when telephone systems were first being installed, despite the fact that only one incoming call could be received at a time, or alternatively, only one outgoing call could be made at a time using a single line. In the case of home telephone installations such single-line arrangements, even today, have been found predominately adequate. Now, homeowners, though, are beginning to have more lines installed as different types of telecommunications equipment beyond telephones, *e.g.*, telecopy machines and modem equipped computers, are being installed and operated in their homes.

15

20

Despite the many decades through which single telephone line installations in homes were found adequate, such single- line installations for businesses were found

early on to be inadequate. Beginning early in the history of telephone service, as more telephones were installed in homes and businesses, the numbers of incoming and outgoing calls to and from businesses proportionately increased. Unavoidably, as business telephone call traffic increased, those that were trying to reach businesses would often  
5 encounter busy lines, and, therefore, the caller would have to hang up and try to call later, or not call back at all, which raised the possibility of lost business. To avoid losing customers, businesses found it necessary to have multiple lines installed to their offices as more and more of those businesses increased the volume of business transacted by telephone.

10 In actuality, the installation of multiple lines only provided a partial solution of the problem; namely, it addressed the problem of technically being able to have multiple telephone conversations at the same time from one location. However, installation of multiple lines alone is not a complete solution because the early rudimentary telephone systems involved each line terminating with a separate telephone and that telephone being  
15 connectable to other system telephones by a separate designated circuit, *i.e.*, telephone number. These consequences of multiple lines -- namely separate multiple telephones and associated telephone numbers -- unavoidably result in, at the very least, inefficiencies for the affected businesses. Ideally each business wants to have only one telephone number that customers have to remember and use to conduct business with that company, and

businesses do not necessarily need each line to terminate with a different telephone set.

The solution that was developed to overcome these problems is a specialized switching system, installed at the business locations, that takes multiple outside lines as inputs and outputs a single line to a connected telephone or outputs a number of lines to a corresponding number of telephones. The switching system, which in its early embodiments utilized electromechanical technology, connects one outside line at a time to a connected telephone, and, depending on the order in which incoming calls are received, assigns each call to the next available line using a method called a hunt group, *i.e.*, a roll-over process. Such a switching system installed at a business with multiple input outside lines, which is called a key service unit, enables that business to have one telephone number and to thereby simultaneously receive as many incoming calls as there are lines provided to the key service unit without a caller encountering a busy signal. Of course someone using a telephone connected to a key service unit could use one of those outside lines that is not being used for a previously made incoming call to make an outgoing call.

With the rapid acceptance and utilization of telephones that occurred in the business world, it did not take long for key service units to be installed for use by at least the number of telephones as there were occupied offices at a business location. Businesses further adopted systems whereby one of the telephones connected to the key service unit would, during business hours, be operated by a receptionist who would answer every

incoming call and either connect a caller to a telephone on which a company employee could have a conversation with the caller or connect the caller to a shunt circuit, which became known as a music-on-hold ("MOH") port or circuit. Such receptionist based systems essentially became the standard for businesses and still are widely used, though the  
5 receptionist function, for many business installations, now has been automated.

Being able to essentially immediately inform a caller that her call has reached the correct business and that someone knows her call has been connected to a MOH circuit are effective steps that a business having a key service unit with multiple outside lines can take to assure customers that their calls are important to the business. However, as the volume  
10 of business conducted by telephone and the pace at which customers expect to have their business attended to have increased, it has become recognized as an imprudent business practice merely to connect customers to essentially silent MOH circuits that do not provide continuous audio feedback. A basis for this recognition is a general belief that about 60 percent of callers who are connected to a MOH circuit for more than about one minute,  
15 will hang up, and of those callers who do hang up, about a third will not call back.

Businesses attempt to avert losing customers who cannot immediately be connected to an employee for a conversation by having systems installed that continuously reproduce audio programs that are connected to their key service unit MOH circuits. Initially, the programs were music, without spoken dialog, that were intended to entertain customers

while connected to the MOH circuits. Subsequently, audio programs were modified to include periodic verbal messages such as "Your business is important to us. Please wait and the next available attendant will answer your call." Such messages are intended to placate customers as they become anxious that their calls are not being answered more  
5 quickly.

Since at least the early 1980's, tape players or other similar electronic audio signal reproduction equipment have been used for providing audio programs to key service unit MOH circuits. Under commonly practiced arrangements for using such electronic systems, businesses contract with organizations who employ, for example, radio disc  
10 jockeys, or the businesses directly contract with disc jockeys themselves, to record spoken text along with background music on tapes so that the recorded audio programs can be reproduced and input to MOH circuits. Unavoidable problems that plague such arrangements include (1) the limited durability of the media on which produced audio programs may be recorded such as tapes; (2) the time required to pass information back  
15 and forth between a business and a producer to prepare a new audio program along with the unavoidable potential errors in both transmitting and receiving information used to create and edit audio programs; and (3) then the logistic delays in delivering audio recordings to business locations where players and key service units are installed.

Now, key service units are digitized and can have digital players connected to the

MOH circuits. Dynamic random access memory (DRAM) circuits can be used in such digital players for reproducing prerecorded audio programs, and these digital players can either be included within the physical box containing key service unit electronics or they can be devices physically separated from the key service units with interconnections made to the key service unit MOH circuit jacks. Use of physically durable memory devices such as solid state DRAM semiconductor circuits address the prior problems of recording media durability, but all the other deficiencies of the prior systems are still unaddressed.

An example of a digitized key service unit system is shown in Figure 1, where a key service unit 10, *e.g.*, a Comdial J1632 Rev. L Digital/Key Service Unit as sold by Comdial Corp., Charlottesville, Virginia, is installed at a business location and is connected to multiple outside telephone lines 12. Multiple telephone sets 14 are connectable to the outside lines 12 through the key service unit 10. For this particular example, a digital player 16 is not physically incorporated as part of the key service unit 10, but instead, is shown in block fashion as being electrically connected to the key service unit 10 at a MOH jack 18.

As with magnetic tapes, compact discs or other electronic recording media, the DRAMs used in digital players 16, such as the RU/RUF 2700 Series On-Hold Remote Unit sold by Premier Technologies, Inc., Long Lake, Minnesota, can be used to record electronic signals provided either from systems where the audio portions of live or

substantially live performances are processed using microphones or from electronic circuits that produce electronic signals previously recorded for input to memory devices.

Significantly, DRAM devices can be used to record and reproduce digital signals at data rates, *i.e.*, bit rates, equal to or even far exceeding those that telephone lines are capable of

5 transmitting, and therefore, the audio programs reproduced using semiconductor memory based systems can consist of signals that provide the best sound quality which telephone lines are capable of transmitting. In fact, when DRAM based recording and reproduction systems are connected to telephone lines, it is the signal transmission limitations of telephone lines that are the restricting factors on the quality of reproduced audio programs.

10 Since it is the telephone lines that restrict audio signal quality and not the DRAM circuits, and since callers are connected to key service units by telephone lines, it is not only feasible to use telephone lines to transmit audio program signals to DRAM circuits for recording, but such an arrangement essentially provides the best quality signal format for recording on a DRAM circuit that a key service unit could use to reproduce such signals to  
15 a caller connected to the key service unit. These facts have been recognized and relied on for a prior system where a personal computer (PC) 20, utilizing at least a 100 megahertz (MHz) processor and having at least a 16 megabit (MB) random access memory (RAM) capability, is connected via a phone card 22 capable of supporting 8 kilohertz (KHz) bit rate transmissions over telephone lines 24 to a connected digital player 16. Software



usable to process and transmit audio program signals via the phone card 22 over the telephone line 24 for remotely activating and recording on the DRAM incorporated in the digital player 16 is loaded on PC 20. An example of such software is Premier's Studio Automation Software 9.5 for Windows® 95 that is made available under license from  
5 Premier Technologies, Inc., Long Lake, Minnesota.

The prior apparatus arrangement, including a PC 20, phone card 22, telephone line 24, digital player 16, connected via a MOH jack 18 to a key service unit 10 that interconnects multiple outside telephone lines 12 with telephone sets 14, as shown in Figure 1 is generally designated by reference numeral 26.

10 To use the remote system 26, a business having an installed key service unit 10 could enter into an agreement, such as a contract, with a service provider who has access to a PC 20 on which is loaded appropriate software and which is also equipped with a phone card 22 to prepare audio programs for the business. The audio programs that the service provider would then prepare could be remotely recorded on the digital player 16  
15 using a telephone line 24 hookup from the PC 20 with an associated phone card 22.

In concept, such a remote system 26 appears to be both an effective and an efficient arrangement. However, in practice, as with the installations of multiple telephone lines to business locations, more than mere installation of the prior available equipment is required to realize efficiencies. True, the installation of the prior available equipment with loaded

software included in remote system 26 provides for electronic delivery of recordable audio programs, but such capability alone fails to provide businesses with a system for effectively reliable ordering, creating, editing and approving audio programs on the tight schedules required to meet the urgent schedules of businesses. For example, businesses  
5 could require new audio programs to be produced and recorded on their digital players on schedules measured in periods as short as days, not weeks, as was acceptable in the past. The prior systems, such as remote system 26, address only one end of the process, *i.e.*, remote recording, not the entire process of ordering, creating, editing, approving and also recording.

10           The unsatisfied needs arise predominantly from the types of communications methods available for use between businesses and service providers. Such communications methods may be utilized to link the business customer and service provider merely cross-town or across intercontinental distances, but irrespective of whatever are the involved geographic distances the communications must be reliable,  
15 timely and essentially always available in terms of both time and location in order to meet the ever-increasing needs of modern businesses. The subject matter that must be communicated between businesses and service providers include both textual materials and audio formats, *i.e.*, music and voice styles, the businesses want prepared for initial and follow-on audio programs. Previously available methods of communication that could be

used ranged from express courier services (limited by at least the constraints of having to move paper or other physical objects (*e.g.*, tapes, compact discs (CDs,) etc.)), telephones (limited by at least not having a permanent or semi-permanent record available of exactly what was communicated), telecopiers (limited by at least first having to produce paper  
5 copies), to e-mail (limited at least by being a non-interactive typographic communications system).

### SUMMARY OF THE INVENTION

The present invention provides a method and apparatus for a telecommunications  
10 remote recording audio program system (TRRAPS) that is used to provide efficient, effective and secure interactive communications between a business customer having an installed key service unit with a volatile memory device for recording and reproducing audio programs, such as a DRAM equipped digital player, and a service provider who produces audio programs that can be recorded on the digital player. TRRAPS uses the  
15 Internet to interconnect the computer and the volatile memory device, that for efficient reference will be labeled a digital player, with its associated key service unit that are all installed at a customer business location with an interconnected personal computer located at the place of business occupied by the service provider. A preferred embodiment of TRRAPS effects the Internet connection between the personal computers at the customer

business and service provider locations through an Internet Web server on which software is loaded to provide a secure, interactive Web site for interconnecting the personal computers.

In use for an embodiment, a business customer using a personal computer would  
5 connect to the Internet and input a Hyper Text Transfer Protocol (http) incorporating an  
Uniform Resource Locator (URL) to call up the TRRAPPS Web site. To then access the  
TRRAPPS Web site which is a site having secure Web pages and therefore may have an  
address prefaced with https instead of http, the business customer will need to enter a  
password that would be purchased by the business customer for that customer's exclusive  
10 use. The TRRAPPS Web site operator would assign exclusive passwords to business  
customers at the times that the business customers pay for the TRRAPPS service. After a  
business customer first accesses the TRRAPPS Web site a cookie including the business  
customer name and password could be created and stored so that the next time the business  
customer calls up the TRRAPPS Web site that information does not have to be again entered  
15 in order for the business customer to enter the TRRAPPS Web site. In addition to being a  
secure interactive system, the TRRAPPS Web site also interconnects the personal computer  
being used by the business customer with the personal computer at the service provider  
location. The business customer who has accessed the TRRAPPS Web site can call up the  
Web page for ordering an initial or an updated audio program. For the situation where an

initial audio program is being ordered, the business customer could link to a TRRAPPS active Web page and call up a sample blank script that can be selected from a database of stored sample scripts that are categorized by business type, *e.g.*, automotive sales, retail, healthcare, etc. After having selected and called up a sample blank script the business customer using the TRRAPPS active Web page can complete, edit and identify the finalized script for linking to the service provider personal computer. In addition to selecting, completing and editing a sample blank script, the customer business employee also can select a type of music, *e.g.*, classical, soft rock, etc. from a database of music selections accessible on another TRRAPPS Web page.

10           Alternatively, the business customer can call up a form questionnaire that the business customer can complete and identify for linking to the service provider personal computer where the provided information would be used by the service provider to create a customized script for the business customer. The customized script then would be entered onto a TRRAPPS Web site database with an identification for linking to the business customer personal computer so that the script can be reviewed, edited or approved for production by the business customer.

15           After an approved script has been loaded on the TRRAPPS Web site and a selection or selections of music to be dubbed into an audio program have also been loaded on the TRRAPPS Web site by the business customer, the service provider, using the input

information, produces an audio program.

In one embodiment of TRRAPPS the service provider, using facilities separate from the TRRAPPS Web site, produces the approved requested audio program and loads the produced audio program on the TRRAPPS Web site where the business customer can  
5 preview the produced audio program. Using the TRRAPPS Web site the business customer and the service provider can then exchange further edits and audio program updates until the business customer approves the produced audio program and downloads the finalized audio program onto a digital player.

In another embodiment of TRRAPPS the business customer selects, in addition to a  
10 music type, a particular voice from a database of voices stored on the TRRAPPS Web site. Then, the service provider, using the TRRAPPS Web site, initiates a computerized text-to-speech process to translate the text of the approved script into a vocalized reading in the previously selected voice. After a vocalized reading is prepared the selected music is next dubbed into the vocalized reading by the service provider using additional software loaded  
15 on a TRRAPPS active Web page. This produced audio program is then available on the TRRAPPS Web site to be previewed by the business customer. When the business customer has approved a music dubbed audio program, the business customer downloads the approved music dubbed audio program onto a digital player.

### BRIEF DESCRIPTION OF THE DRAWINGS

Corresponding components in the various figures of the appended drawings are either designated by the same numerals or, if different numerals are used, their relationship is identified in the text. The various objectives, advantages and novel features of the invention will become more readily apprehended from the following detailed description when taken in conjunction with the appended drawings, in which:

Figure 1 is a block diagram showing a prior art system capable of recording audio programs for reproduction through key service units;

Figure 2 is a block diagram showing an embodiment for a telecommunications remote recording audio program system (TRRAPS) including a Web server;

Figures 3A and 3B show flow charts depicting the steps for a TRRAPS Web site embodiment where a service provider produces audio programs apart from the TRRAPS Web site and loads the produced audio programs onto the TRRAPS Web site; and

Figures 4A and 4B show flow charts depicting the steps for another TRRAPS Web site embodiment where a service provider, using the interactive TRRAPS Web site, produces audio programs using text-to-speech software and music stored in databases that are incorporated as active TRRAPS Web pages.

### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Referring to the drawings, a block diagram for an apparatus embodiment of the

present invention to provide a telecommunications remote recording audio program system (TRRAPs), which is implemented as an Internet based system, is shown in Figure 2, and this TRRAPs apparatus is generally designated by reference numeral 28. The TRRAPs 28 includes a digital player 16 that has a DRAM or other memory device which is capable of both recording and reproducing audio programs. Audio programs recorded on the digital player 16 can be reproduced for playback through a key service unit 10 that interconnects outside telephone lines 12 with telephone sets 14. Specifically the reproduced audio programs are input to those outside telephone lines 12 that have been connected by the key service unit 10 to a MOH jack 18 which is also connected to the digital player 16. Both the key service unit 10 and the digital player 16 are installed at a TRRAPs customer location to facilitate having multiple outside telephone lines 12 interconnected to telephone sets 14, all of which are installed at the same business location.

A personal computer (PC) 30 is also located at the TRRAPs customer location utilizing at least a 100 MHz processor and having at least a 16 MB RAM capability. This PC 30 is connectable to the Internet through a modem 32.

The PC 30 and modem 32, at the TRRAPs customer location, are interconnected by a Web server 34 to a second modem 32(a) that is connected to a PC 20, also utilizing at least a 100 MHz processor and having at least a 16 MB RAM capability. The PC 20 and modem 32(a) are located at the place of business of a service provider who the TRRAPs



customer engages to provide audio programs for recording on the digital player 16.

Figures 3A and 3B set out a flow diagram for a routine that enables implementation of a TRRAPs embodiment using a Web site. The routine set out in Figures 3A and 3B includes Web pages, which are documents that can be created using Hyper Text Markup  
5 Language (HTML).

To use the TRRAPs 28 which is implemented via a secure Web site, a TRRAPs customer accesses the Web server 34 using a http (or https) that includes a URL for a TRRAPs Web site, or the TRRAPs customer uses a different method such as a hyperlink from a Web page at a non-TRRAPs Web site to access the TRRAPs Web site. When a  
10 TRRAPs customer wishing to use the TRRAPs 28 has accessed the TRRAPs Web home page, that TRRAPs customer will be identified as an user authorized to have access to TRRAPs secure Web pages that are linked to the home page. Such identification is accomplishable by a first-time TRRAPs customer using prompts set out at the TRRAPs home page to purchase a password, and, thereby, purchase services available by using the  
15 TRRAPs 28. Assignment of a password includes payment of a service fee that is chargeable via the TRRAPs Web site by entry of credit card information at the TRRAPs Web home page. Entry of an authorized password by a TRRAPs customer, either manually or via a cookie, in the case of existing TRRAPs customers, completes step 100 (see Figures 3A and 4A) to establish an authorized connection with the TRRAPs Web site.

After an authorized entry to the TRRAPPS Web site a security restricted Web page is displayed on the monitor of PC 30 that includes an inquiry for the TRRAPPS customer to answer as to whether or not the TRRAPPS customer wants to make a request for an original, *i.e.*, either a first or a never previously produced, audio program. Answering this inquiry at step 110 in the affirmative causes the TRRAPPS Web site to display a second inquiry for the TRRAPPS customer as to whether the TRRAPPS customer wants to view and possibly use one of a selection of blank sample scripts stored in a database within the TRRAPPS Web site. If the TRRAPPS customer answers this inquiry at step 120 in the affirmative, a list of selections for blank sample scripts by business type, *e.g.*, healthcare, banking and financial services, professional services, insurance, etc., will be displayed at step 130, and the TRRAPPS customer can make a selection.

After making this selection the TRRAPPS customer has the blank sample script displayed on the monitor of PC 30 as an interactive Web page that the TRRAPPS customer can edit, complete with specific information and download to a TRRAPPS database at step 140.

An alternative embodiment for step 130 includes a questionnaire the TRRAPPS customer also can complete and download to a TRRAPPS database at step 140. The questionnaire requests information from the TRRAPPS customer such as business type, hours, years in business, etc., so that the service provider can draft a tailored script for

that TRRAPPS customer.

Upon entry to a TRRAPPS database of the script edits and the provided information at step 140, the TRRAPPS customer is prompted by the TRRAPPS Web page displayed on the monitor of PC 30 at step 150 to select a music type for dubbing on the audio program  
5 to be produced from a variety of music types stored in a database within the TRRAPPS Web site.

Back at step 120, if the TRRAPPS customer selects not to use a blank sample script or a questionnaire stored in a TRRAPPS Web site database, the TRRAPPS customer at step 160 can input a script that the TRRAPPS customer has written for the audio program being  
10 ordered. After inputting a script at step 160 the TRRAPPS customer would be prompted by the TRRAPPS Web site to select a music type at step 150 for dubbing into a produced audio program.

If after establishing an authorized connection with the TRRAPPS Web site at step 100, the TRRAPPS customer at step 110 inputs a negative response to the inquiry of  
15 whether the TRRAPPS customer wants the service provider to create an original audio program, the TRRAPPS customer will be enabled by the TRRAPPS Web site at step 170 to access a secure database containing prior developed scripts or scripts that were used for producing prior audio programs for that TRRAPPS customer. Every TRRAPPS customer has its own secure database that cannot be accessed by others, including other TRRAPPS

customers, where prior scripts for that TRRAPPS customer are stored. In order to access the particular prior script database for a TRRAPPS customer, a TRRAPPS 28 user would have to access the TRRAPPS Web site with the unique password assigned to that TRRAPPS customer. When the database for step 170 is accessed, the TRRAPPS Web site displays on  
5 the monitor of PC 30 a list of all prior scripts stored in the database. The TRRAPPS customer then selects one of the prior scripts which is displayed on the monitor of PC 30. That script can be edited at the interactive TRRAPPS Web page or input without edits for production of the next audio program.

At this point, the TRRAPPS customer is prompted at step 180 with a query as to  
10 whether the music type previously dubbed with the selected prior script is to be used for the new production. If the answer is no, then the TRRAPPS Web site prompts the TRRAPPS customer to select a new music type from those stored in the TRRAPPS music database at step 190.

At this point, in all instances except one, the TRRAPPS customer has input an  
15 approved script and selected a music type for an audio program to be produced. In the instance for which the TRRAPPS customer has not input an approved script the TRRAPPS customer has completed a questionnaire at step 140. Before an audio program can be produced in this instance a script must be written by the service provider and edited or approved by the TRRAPPS customer. To facilitate procedures for production of audio

programs, the service provider can post an anticipated time period such as a set number of hours, on the TRRAPPS Web site by which the TRRAPPS customer can reaccess the Web site and call up the script prepared and downloaded to the TRRAPPS Web site by the service provider. The downloaded proposed script will be accessible by the TRRAPPS customer on an interactive TRRAPPS Web page. Using that interactive TRRAPPS Web page the TRRAPPS customer can approve the input script or edit it and then approve it for production of an audio program.

Now that an approved script and music selections have been entered into the TRRAPPS Web site, the service provider produces an audio program using these input specifications. Production of the audio program is accomplished using known sound production and recording equipment and techniques. The final audio program is then downloaded on the TRRAPPS Web site at step 200 (see Figure 3B). Again the service provider can post an anticipated time on the TRRAPPS Web site that will be required for production and downloading to the TRRAPPS Web site of a proposed audio program, after which time, the TRRAPPS customer can reaccess the TRRAPPS Web site and download a portion or the entire proposed audio program onto PC 30 for previewing at step 210.

After downloading the proposed audio program the TRRAPPS customer is queried at step 220 as to whether or not the proposed audio program is approved. If the TRRAPPS customer does not approve the proposed audio program, the TRRAPPS customer posts

desired changes in text, music, composition, etc., on a TRRAPPS interactive Web page at step 230. The service provider, using this information, produces an edited proposed audio program that is input to the TRRAPPS Web site at step 200. The TRRAPPS customer then repeats steps 210 and 220. This process is repeated until the TRRAPPS customer approves an audio program at step 220, and directs downloading at step 240 of the approved audio program from PC 30 to digital player 16. The TRRAPPS customer could also request that the approved audio program be downloaded from PC 20 to digital player 16 using a separate line.

For another embodiment of the present invention a TRRAPPS Web site set up with an interactive Web page where text-to-speech software is incorporated to further facilitate production of audio programs. Such text-to-speech software is exemplified by TextTalk licensed by Dialogic Corporation, Parsippany, New Jersey, and by Naturally Speaking licensed by Dragon Systems, Inc., Newton, Massachusetts. The text-to-speech routine for a TRRAPPS 28 provides a database of different voices including female, male and famous voices (licensed as necessary). A set of flow charts for such a text-to-speech TRRAPPS embodiment is set out in Figures 4A and 4B.

All of steps 100 through 140, and 160 and 170 set out in Figure 4A are identical to those set out in Figure 3A and as described above. At steps 150(a), 180(a) and 190(a) shown in Figure 4A, the TRRAPPS customer is either queried as to whether previously

selected music type and/or voice selections are to be used in a new production (step 180(a)), or the TRRAPPS customer is prompted to select a music type and voice from databases stored at the TRRAPPS Web site.

As shown in Figure 4B for this embodiment, the service provider at step 200(a)  
5 creates a proposed audio program using the input script, music type and voice selections made by the TRRAPPS customer. Then steps 210 and 220 again are the same for this embodiment as that shown in Figure 3B. If the response to query step 220 is no, however, the TRRAPPS customer could at step 230(a) (shown in Figure 4B) modify the voice selection for the revised audio program. Upon final approval by the TRRAPPS customer of  
10 the audio program at step 220 the approved audio program is downloaded from either PC 30 or PC 20 to digital player 16 using step 240.

In another embodiment for a text-to-speech TRRAPPS Web site, the TRRAPPS customer is prompted to use the text-to-speech software and other production software loaded on the TRRAPPS Web site to produce an audio program at a step (not shown). For  
15 such an embodiment the TRRAPPS customer iterates through as many productions as are required until an acceptable program is produced. When an acceptable audio program is produced the TRRAPPS customer directs downloading of the program to a digital player 16.

Although the present invention has been described in terms of various embodiments, it is not intended that the invention be limited to these embodiments.

Modifications within the spirit of the invention will be apparent to those skilled in the art.

For example, instead of using a key service unit hard-wired to telephone sets, the key service unit could additionally include a transmitter sending signals to remote receivers with speakers for reproduction of audio programs at gasoline pumps, or at different

- 5 locations in retail establishments. Instead of recording audio programs on digital players connected to MOH jacks, the audio programs could be recorded on voice message circuits that may even be included in personal computer systems that are interconnected to key service units.

The scope of the present invention is defined by the claims that follow.



What is claimed is:

1. A method for ordering, approving and downloading an audio program comprising the steps of:
  - a customer ordering production of an audio program;
  - the customer storing a script to be used for production of the audio program;
  - the service provider preparing a proposed audio program using the stored script and storing the proposed audio program.
2. The method of claim 1 wherein the service provider uses artificial text-to-speech means for preparing the proposed audio program from the stored script.
3. A method for ordering, approving and downloading an audio program comprising the steps of:
  - a customer ordering preparation of a script for production of an audio program;
  - a service provider preparing a proposed script for the audio program and storing the proposed script;
  - the customer retrieving, reviewing and approving the stored

proposed script;

the service provider preparing a proposed audio program  
using the stored script and storing the proposed audio program;

the customer retrieving, reviewing and approving the  
proposed audio program for downloading to a recording device capable of  
reproducing the downloaded audio program.

4. The method of claim 3 wherein the service provider uses artificial text-to-speech means for preparing the proposed audio program from the stored script.

1/6

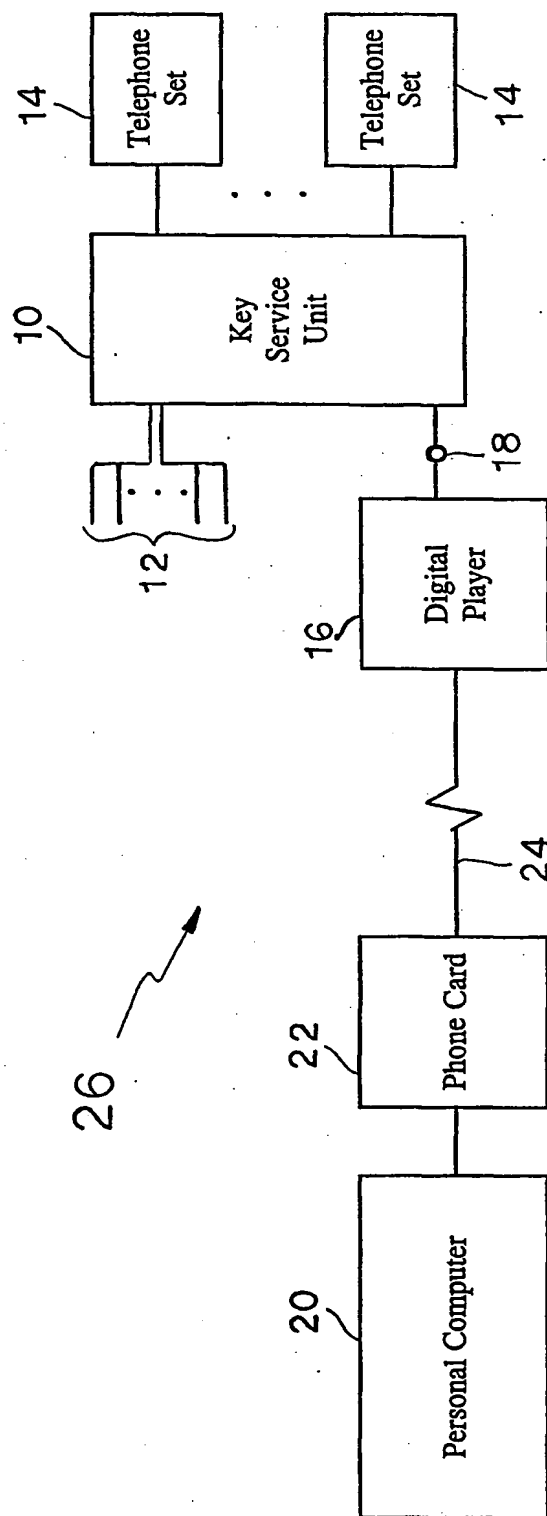


FIG 1 (PRIOR ART)

2/6

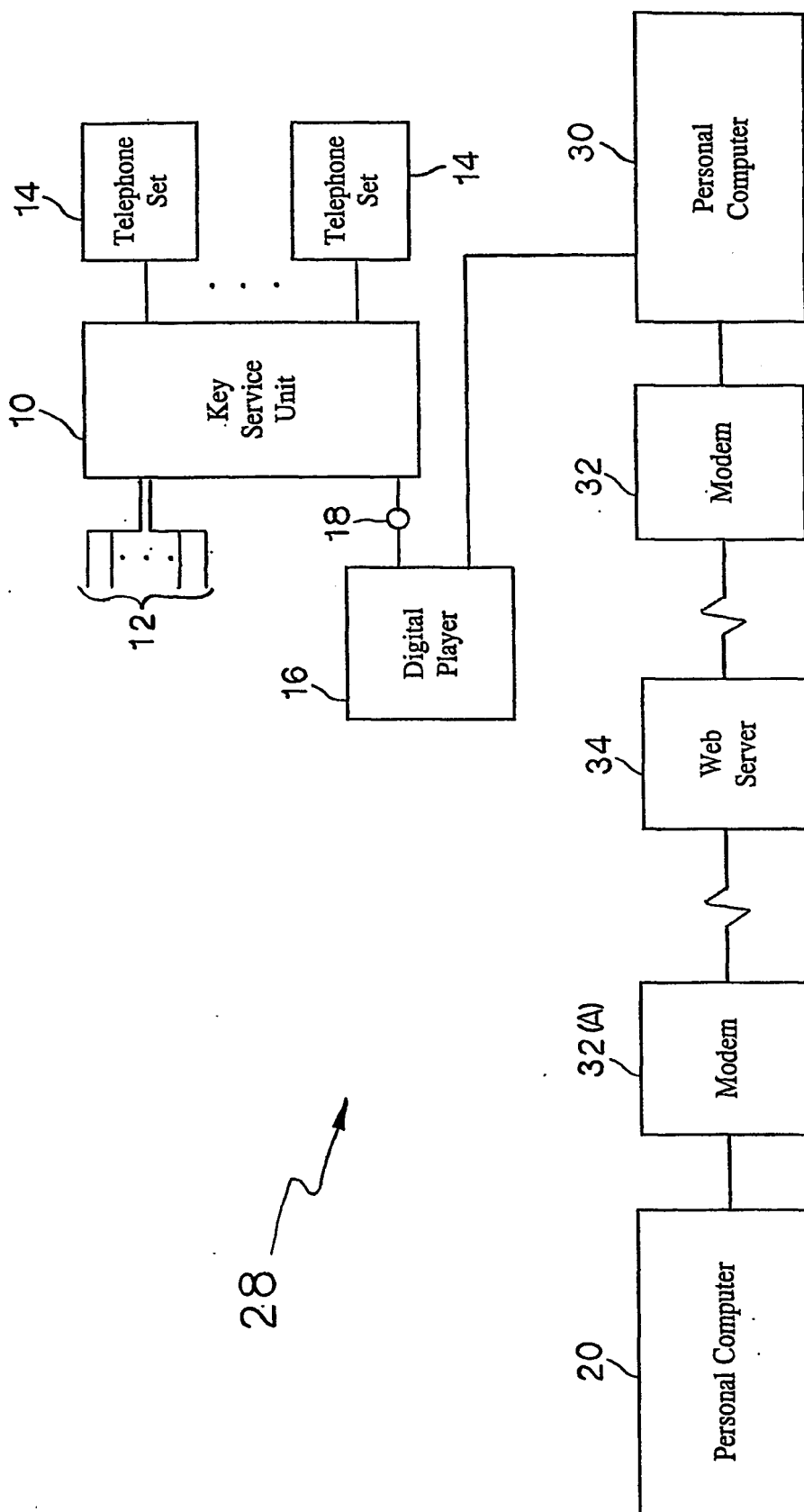
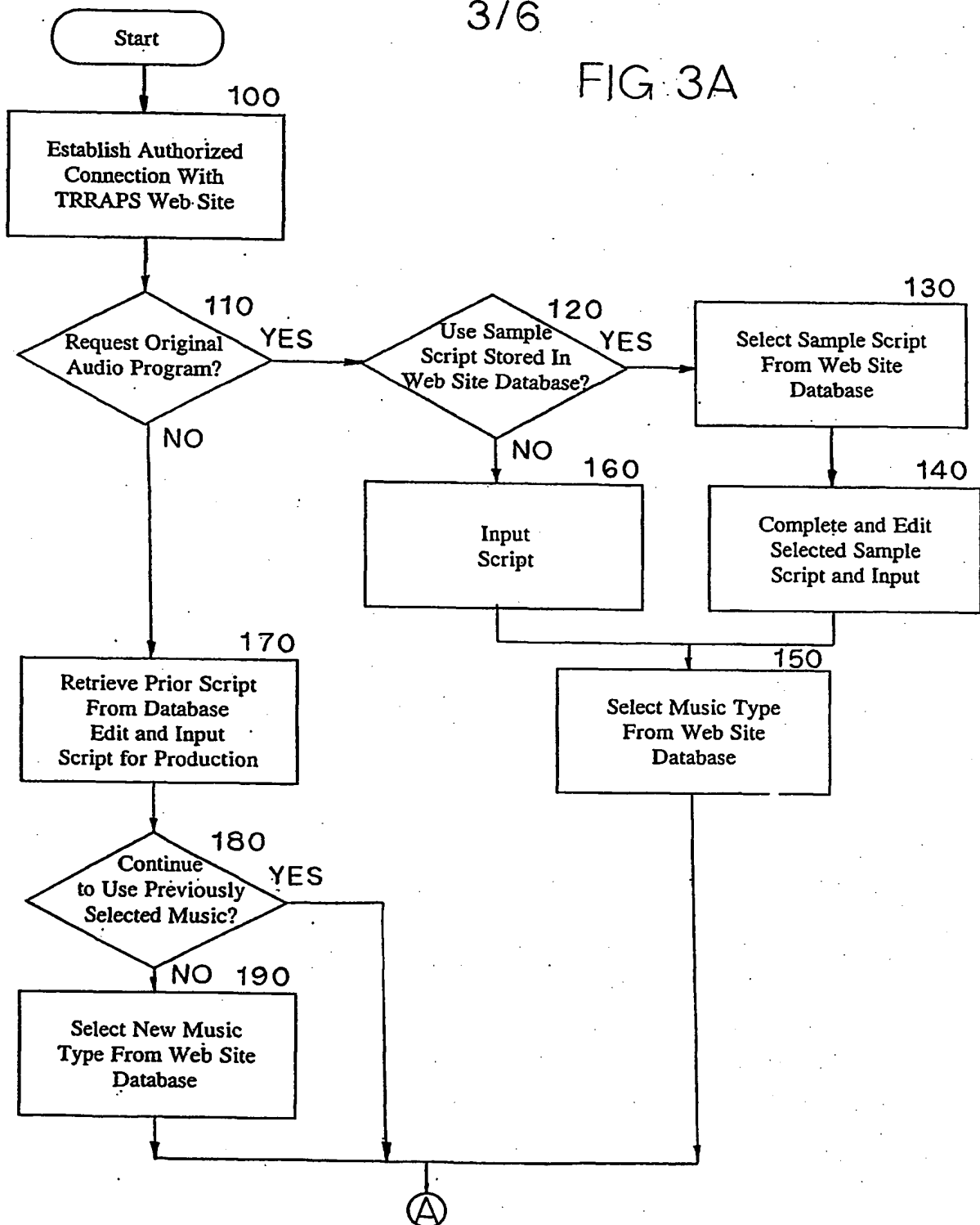


FIG. 2

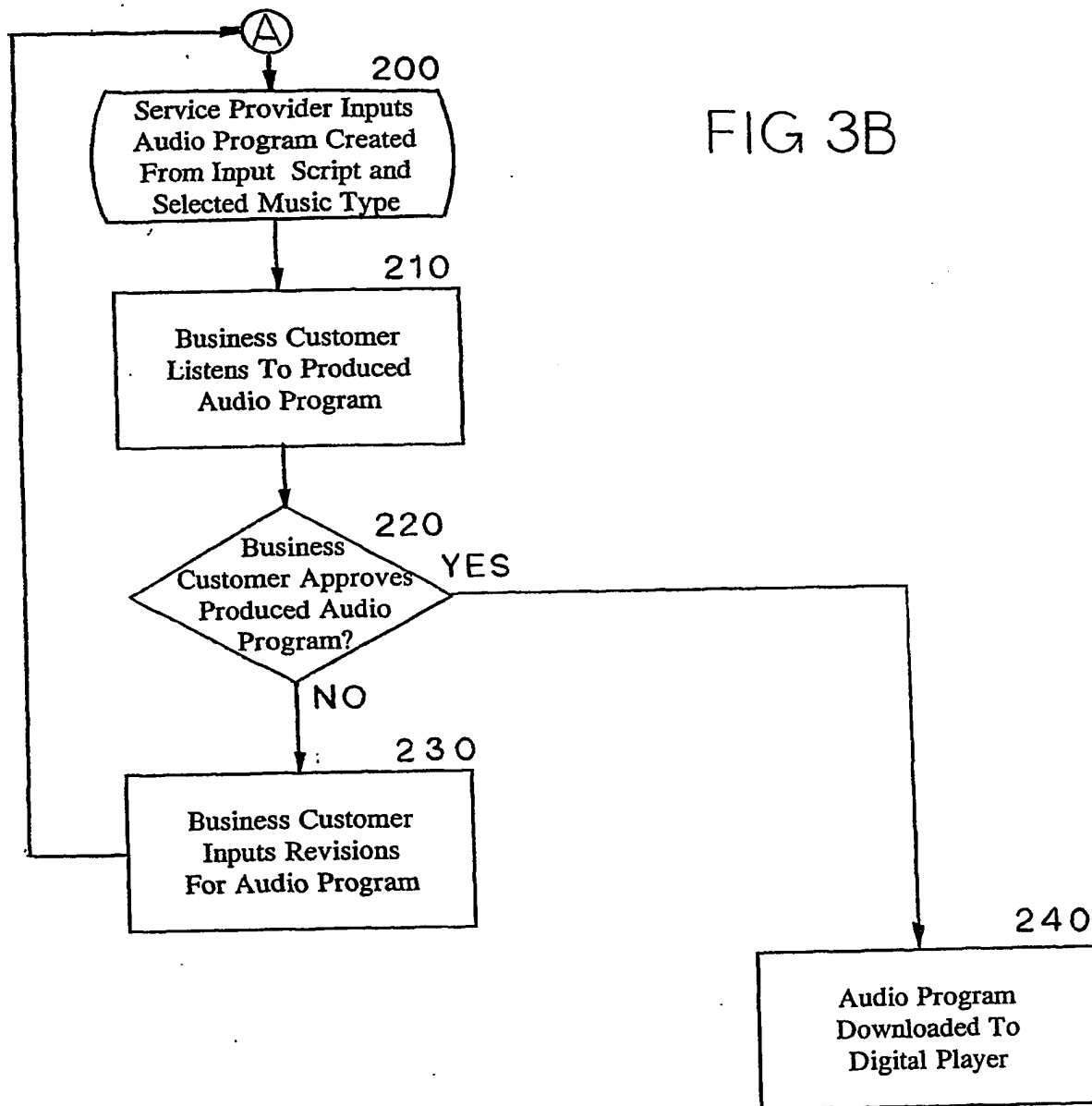
3/6

FIG. 3A



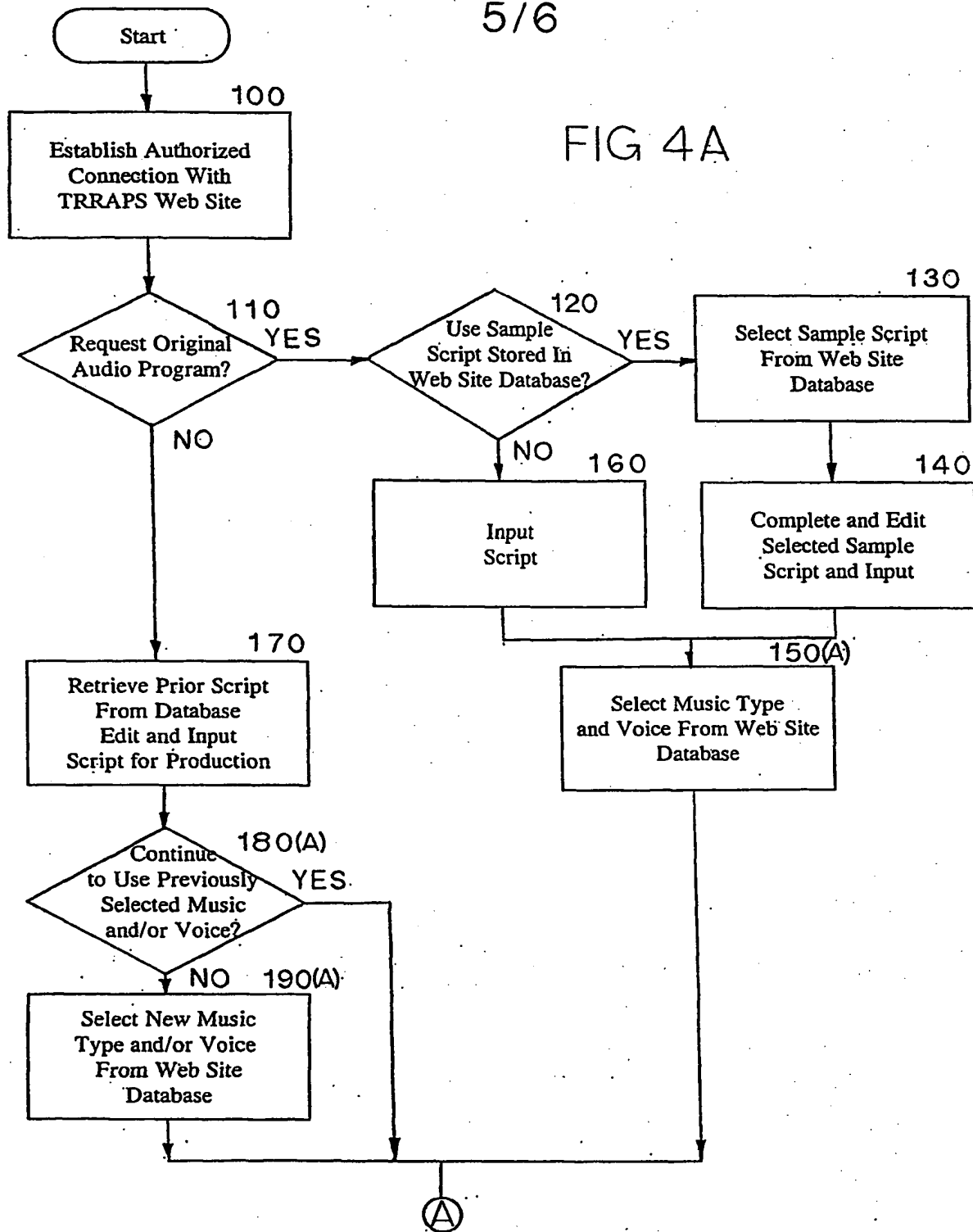
4/6

FIG 3B



5/6

FIG 4A



6/6

FIG 4B

